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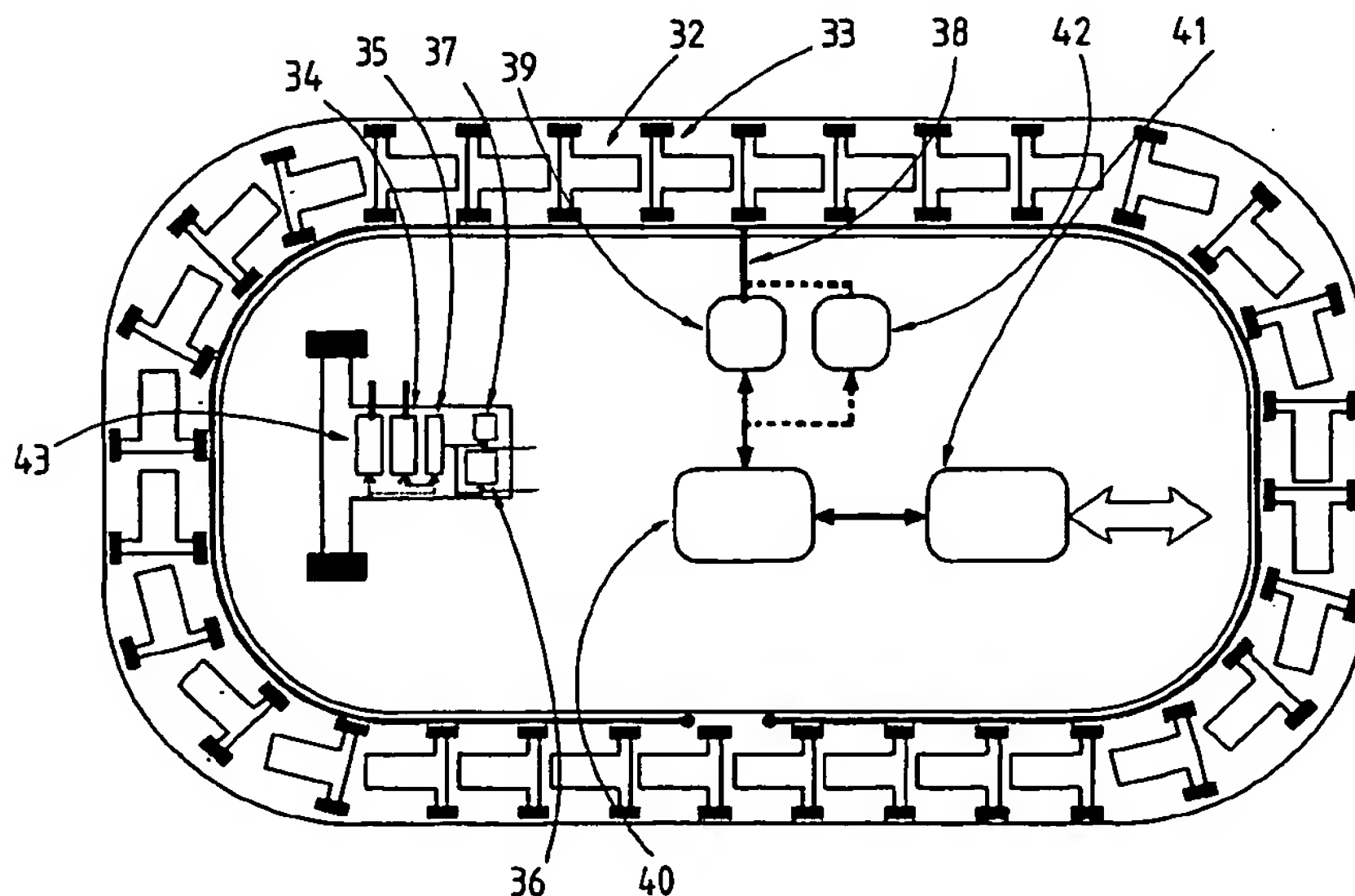
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(54) Title: A MATERIAL SORTATION SYSTEM



(57) Abstract: A sortation system comprises a plurality of transport units (32, 33) connected end to end to form a continuous train and mounted for movement along a track defining at intervals along its length destination ports at which items carried by the transport units may be discharged under the control of a central control system (41). The central control system (41) comprises a radio frequency transmitter device (39) through which control signals to the continuous train (32, 33) are transmitted and the continuous train (32, 33) comprises a radio frequency receiver device (39) for receiving the transmitted control signals. The radio frequency transmitter device (39) is connected to a leaky feed aerial (38) which extends the length of the track.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

AMENDED CLAIMS

[received by the International Bureau on 13 March 2002 (13.03.02);
original claims 1-12 replaced by new claims 1-13 (3 pages)]

1. A sortation system comprising a plurality of transport units connected end
to end to form a continuous train and mounted for movement along a track defining at
5 intervals along its length destination ports at which items carried by each of the transport
units may be selectively discharged under the control of a central control system, wherein
the central control system comprises a radio frequency transmitter device through which
control signals to the continuous train are transmitted, and the continuous train comprises
a radio frequency receiver device for receiving the transmitted control signals and an on-
10 board local controller for operating each of the transport units in response to a received
control signal, characterised in that the central control system further comprises means
for determining the current position of each transport unit relative to a fixed datum
position on the track, which current positional data is periodically communicated to the
on-board local controller, and the on-board local controller comprises means for
15 extrapolating from the speed of the continuous train the distance travelled at any instant
beyond the position previously communicated to it by the central control system.

2. A sortation system according to claim 1, characterised in that the central
control system comprises means for calculating the speed of the continuous train and for
communicating to the on-board local controller data indicative of this.

20 3. A sortation system according to claim 1, wherein the on-board local
controller comprises means for calculating the speed of the continuous train.

4. A sortation system according to claim 3, wherein the on-board local
controller calculates the speed of the continuous train by determining the rate of change

of its position relative to the said fixed datum position from the current positional data periodically communicated to it.

5. A sortation system according to any preceding claim, wherein the position determining means comprises means for detecting the passage of a designated transport unit past the said fixed datum position, means for continuously determining the distance travelled by the designated transport unit past the datum position and means for initiating the distance determining means on detection of the designated transport unit.

6. A sortation system according to claim 5, wherein the distance determining means comprises sensor means mounted in the track for sensing equidistantly spaced markings on the continuous train, and a counter for counting same.

7. A sortation system according to any preceding claim wherein each of the transport units comprises a radio frequency receiver device connected to an on-board local controller which operates a discharge mechanism of the transport unit in response to received control signals.

8. A sortation system according to any of claims 1 to 6, wherein the continuous train comprises at least one master transport unit and a plurality of slave transport units associated with the or each master transport unit, and the or each master transport unit comprises a radio frequency receiver device connected to an on-board local controller which operates the discharge mechanism of the master transport unit and each of the slave transport units associated therewith in response to received control signals.

9. A sortation system comprising a plurality of transport units connected end to end to form a continuous train and mounted for movement along a track defining at intervals along its length destination ports at which items carried by the transport units

may be selectively discharged under the control of a central control system, wherein the central control system comprises a radio frequency transmitter device through which control signals to the continuous train are transmitted, and the continuous train comprises a radio frequency receiver device for receiving the transmitted control signals and on-board local controller connected to the receiver device which operates the discharge mechanism of a selected transport unit in response to a received control signal characterised in that the radio frequency transmitter device is connected to a leaky feed aerial which extends the length of the track.

10. A sortation system according to claim 9, wherein the leaky feed aerial comprises a screened cable having holes in the screening at intervals along its length.

11. A sortation system according to claim 9 or 10, wherein the leaky feed aerial runs parallel to the track.

12. A sortation system according to claim 9 or 10, wherein the leaky feed aerial runs within the track itself.

13. A sortation system according to any of claims 8 to 12, wherein two-way data communication between the central control system and the or each on-board local controller is conducted on two separate channels.

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